

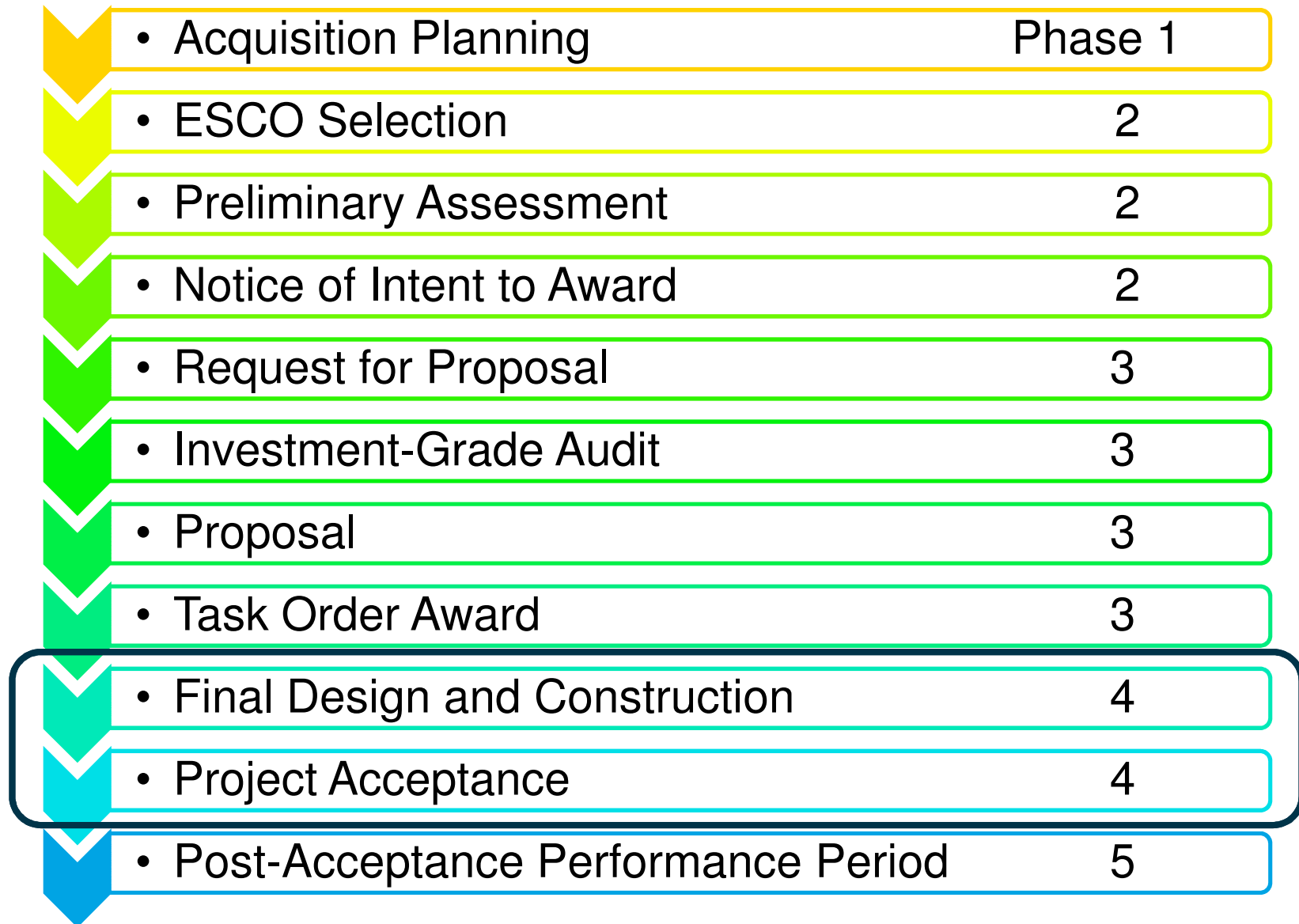
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Phase 4: Implementation Design – Construction – Acceptance



National Renewable Energy Laboratory

Milestones in the ESPC Process



Phase 4: Implementation

Phase 4:

Project Implementation –
Design, Construction, Project Acceptance

1 – 2 years or longer

Phase 5:

Post-Acceptance Performance

Up to 25 years including construction

★ Post-Award Conference

Project Design and Review

- ☐ Final Project Design
- ☐ Design Submittals
- ★ Agency review and approval
- ★ ☐ ESCO provides insurance and bonds

★ Notice to Proceed with Construction

- ☐ **Construction**, inspections, documentation, training★

- ☐ Commissioning and Post-Installation M&V★

★ Acceptance of installed project

Key

- ★ Agency Action
- ☐ ESCO Action
- ★With Agency Participation/Oversight

Post-Award Conference

- Participants
 - Agency —
CO, COTRs, inspectors, others on acquisition team
 - ESCO —
Project manager, design, construction, commissioning, M&V, and performance-period services personnel
- Purpose
 - Review roles, responsibilities, expectations, timelines, and communication protocols
 - Review schedules for design, construction
 - Establish protocols for site access and submittal review

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Submittals (per IDIQ § C.5 and TO RFP)

- Design and construction submittals
 - Designs, drawings, installation plans
 - Manufacturer's cut sheets for actual equipment to be installed
 - Construction schedule
- See Sample Deliverables for Task Orders, Attachment J-4 of IDIQ

Design Review

- Agency reviews and verifies:
 - Compliance with requirements in TO
 - Design clearly addresses ECM interfaces with existing equipment
 - Drawing particulars are in compliance with TO
- FEMP ESPC team reviews for advanced technologies

ESCO's submittals constitute requirements of the contract after acceptance by agency

- Acceptance of submittals does not relieve ESCO of responsibility to meet facility standards of service and deliver guaranteed cost savings (IDIQ C.5.1.A).
- ESCO may not deviate from approved submittals.
 - If deviation is required, the deviation must be approved by the Contracting Officer prior to installation.



Notice to Proceed with Installation

- CO issues notice AFTER:
 - ESCO provides
 - Acceptable performance and payment bonds (as required)
 - Insurance certificates
 - Agency approves
 - ESCO's designs and construction plans
 - Related submittals

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ECM Installation Activities

- Agency verifies proper ECM installation per TO requirements and approved submittals
- Agency monitors ECM installation activity
- Agency witnesses ECM commissioning and M&V activities
- FEMP ESPC team is available for support on advanced technologies

Agency Post-Installation Inspections and Verifications

- Agency verifies receipt and reviews:
 - As-built drawings in format specified in TO
 - O&M manuals & related O&M procedures
 - Spare parts lists and provided spare parts
 - Manufacturer warranties
 - ECM training materials & proposed schedule
 - Commissioning report
 - Post-installation M&V report

COR Post-Installation Activities

- Verifies completion of construction punch list items
- Verifies resolution of any ECM performance deficiencies
 - FEMP can help with resolution of performance issues
- Verifies that any revised post-installation submittals are acceptable
- Coordinates agency staff training with ESCO
- Coordinates inspections of rebate-related ECMs with ESCO and utility

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Commissioning Report (IDIQ § C.5.4)

- Agency review of report should verify:
 - ESCO compliance with Commissioning Plan
 - Commissioning results meet or exceed design intent and facility performance requirements
 - Any seasonal testing to be required at later date
 - Example: Chiller performance test if ECM installation is completed before summer peak loads

Agency Reviews Post-Installation M&V Report

- Agency verifies ESCO compliance with M&V Plan, and that:
 - Energy and O&M baseline data is consistent with agreed-upon baseline conditions
 - Energy rates for first year of performance period are as specified in TO
 - Installed ECMs have the potential to meet or exceed the guaranteed annual cost savings
- FEMP ESPC Team also reviews Post-Installation Report

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Phase 4: Implementation

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

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Acceptance of Project Implementation – After All Post-Installation Submittals Are Approved (IDIQ § E.3)

- CO provides written notice of acceptance to ESCO
 - Confirms project complies with all TO requirements
 - Advises that ESCO may submit first invoice
 - Begins the performance period
- Early acceptance of individual ECMs saves on interest costs (IDIQ § E.3)
 - ECMs completed early in implementation period

Handling Changes During Implementation Phase

- Variances between design and as-built installation
 - ESCO and agency should track changes
 - Changes and energy impacts should be documented in Post-Installation Report
- Preferred: Handle changes so that no revision of TO schedules or financing structure are required
- Timely negotiations preserve the project schedule

Prepare for Contract Administration

- Follow your Contract Management Plan –
This is the plan that ensures continuity of contract administration as individuals come and go
 - Prepare Plan at TO award
 - Follow the plan or modify during design/construction and after project acceptance
- Maintain all ESPC project documents — especially M&V and commissioning data and O&M manuals and training materials
 - Audits, turnover, ...

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Q1: How is the ESPC construction process different from conventional design-building construction?

A: Commissioning and post-installation M&V are required by contract.

Q2: Do the ESCO's submittals (designs, drawings, etc.) constitute requirements of the contract?

A: Yes.

Q3: What is the main M&V-related activity during the construction period?

A: Post-installation M&V activities and report.

Q4: Name two post-installation ESCO submittals related to O&M.

A: O&M manuals & related O&M procedures

Spare parts lists and provided spare parts

Manufacturer warranties

ECM training materials & proposed schedule



Next: N Phase 5 – Post-Acceptance Performance Period ► M-21